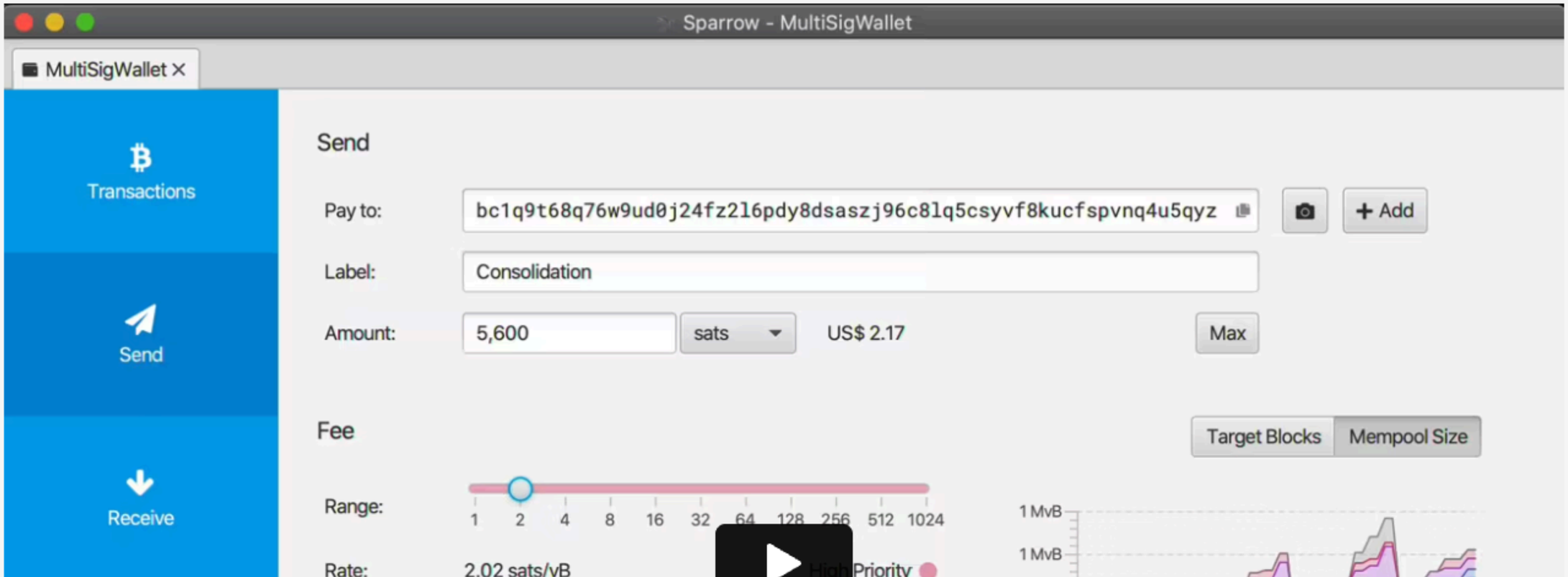
bitcoin++

Sparrow Bitcoin Wallet

Sparrow is a Bitcoin wallet for those who value financial self sovereignty. Sparrow's emphasis is on security, privacy and usability. Sparrow does not hide information from you - on the contrary it attempts to provide as much detail as possible about your transactions and UTXOs, but in a way that is manageable and usable.



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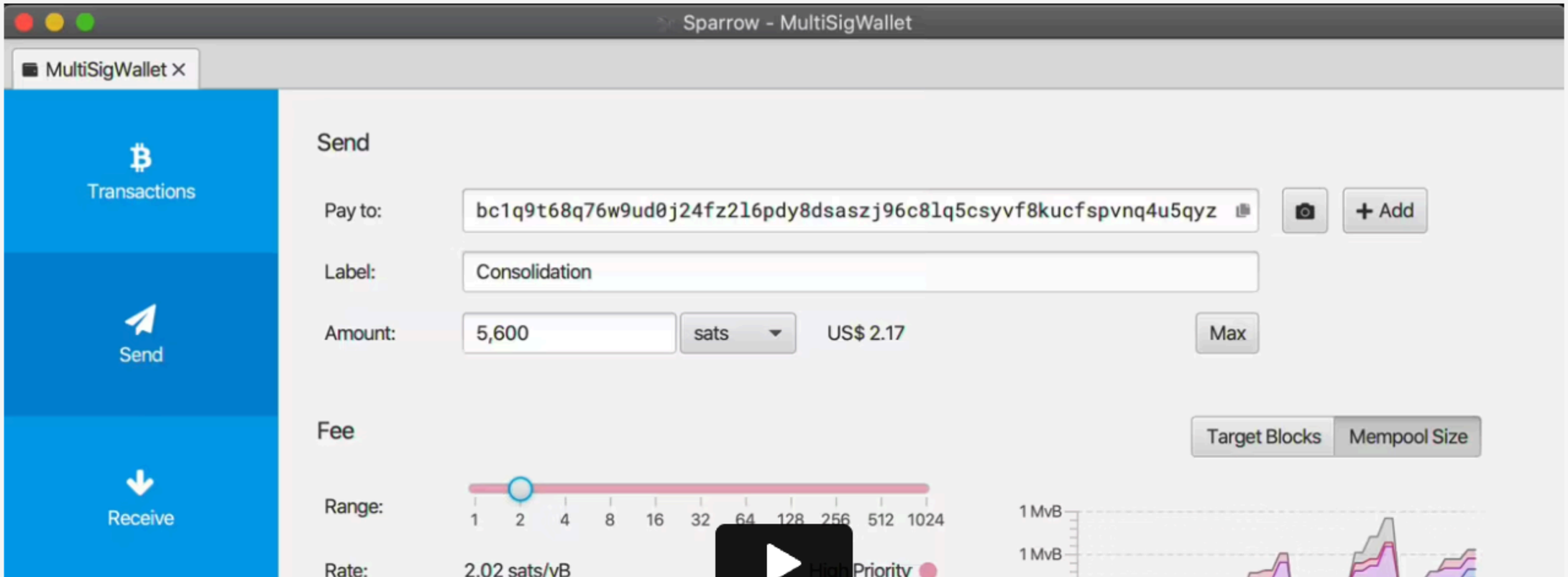

Silent payments output descriptor BIP proposal

Inbox ×

Craig Raw <craigraw@gmail.com>
to me

Dec 12, 2025, 5:33 PM (4 days ago)

Hey Lisa,

Great hanging out last weekend!

As promised here's a quick summary of my silent payments output descriptor BIP, mostly lifted from my mail to bitcoin-dev:

There is a practical need for a silent payments output descriptor format in order to enable wallet interoperability and backup/recovery. There has been sc
discussion on this topic [1][2] which this BIP proposal builds on:

https://github.com/bitcoin/bips/pull/2047

In summary a new top level script expression sp() is defined, which takes as it's first argument one of two new key expressions:

- spscan1q... which encodes the scan private key and the spend public key
- spspend1q... which encodes the scan private key and the spend private key

The outputs may then be generated by combining this key material with the sender input public keys. As suggested by the naming, spscan key expressi
scanning only (watch only) wallets, while spspend key expressions allow you to reconstruct a wallet that can spend.

In order to reduce the scanning burden, a block height may be optionally specified in the sp() expression as a second argument for a wallet birthday. Fin
more positive integers may be specified as further arguments to scan for additional BIP352 labels. The change label (m = 0) is implicitly included.

nts output descriptor BIP proposal Inbox ×

@gmail.com> Dec 12, 2025, 5:33 PM (4 days ago)

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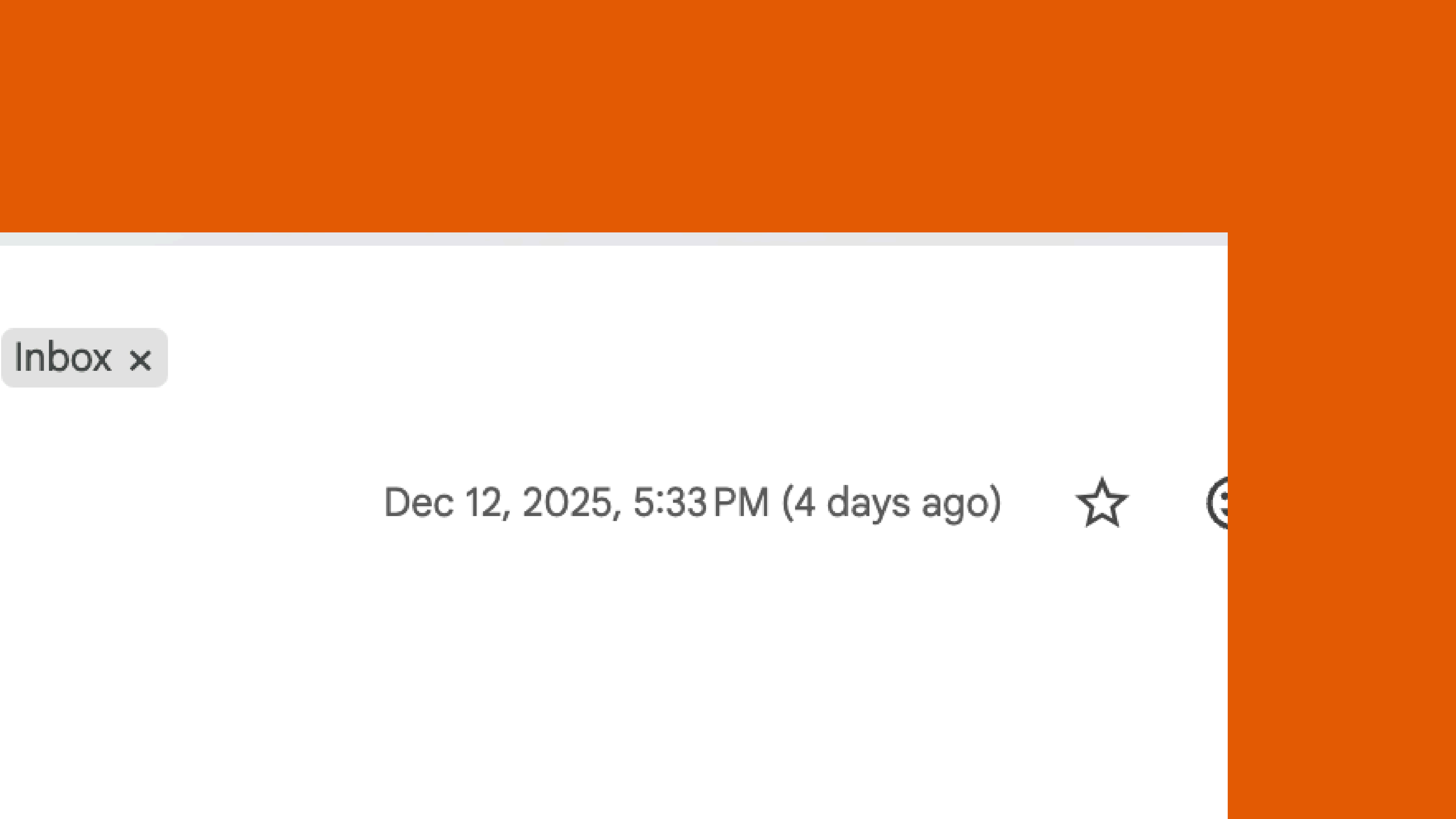
Inbox ×
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bitcoin / bips

Code | Pull requests 67 | Actions | Wiki | Security | Insights

Add sp() output descriptor format for BIP352 Silent Payments

Open craigraw wants to merge 2 commits into `bitcoin:master` from `craigraw:spdescriptor`

Conversation 7 | Commits 2 | Checks 4 | Files changed 1

Commit 6807d2f

Filter files...

bip-spdescriptor.mediawiki

Update headers and remove space after comma in descriptors

craigraw committed 2 weeks ago · ✓ 4 / 4

bip-spdescriptor.mediawiki

Specification

A new top level script expression is defined: `sp()`.

Key Expressions

Two new key expression types are defined for use with `sp()` descriptors:

`spscan`

The `spscan` key expression encodes the scan private key and spend public

- The human-readable part "spscan" for mainnet, "tspscan" for testnets
- The data-part values:

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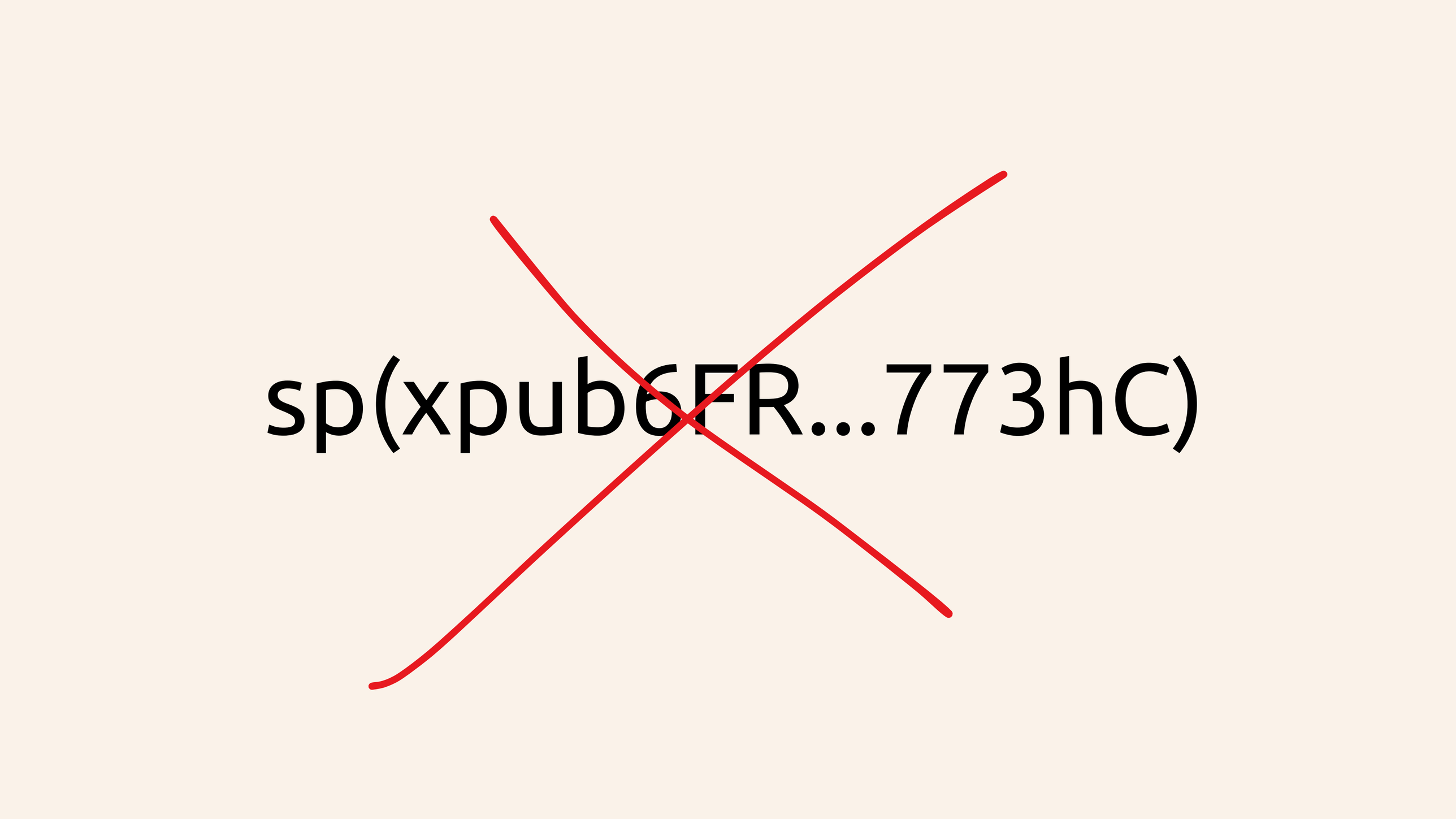
sp()

sp([key expression])

sp(xpub6FR...773hC)


sp(xpub6FR...773hC)

sp([key expression])

silent payment

sp([key expression])

sp(spscan1q...)

sp(spspend1q...)

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sp(spscan1q...)

sp(spscan1q<private key>...)

scan key

sp(spscan1q<private key>...)

scan key

sp(spscan1q<private key>...)

32 bytes

sp(spscan1q<private key>
<public key>)

spend key

sp(spscan1q<private key>
<public key>)

spend key

sp(spscan1q<private key>
<public key>)

spend key

sp(spscan1q<private key>
<public key>)

33-byte

spend key

sp(spscan1q<private key>
<public key>)

x, y' 33-byte

sp(spscan1q<private key>
<public key>)

sp(spscan1q<private key>
<public key>)

sp(spspend1q<private key><public key>)

sp(spspend1q<private key><public key>)

sp(spspend1q<private key><private key>)

sp(spspend1q<private key><private key>)

sp(spspend1q<private key><private key>)

sp(spspend1q...)

sp(spspend1q...)

i can spend your money

sp(spscan1q...)

i can see your money

sp([key expression])

sp([key expression],
BIRTHDAY,LABEL(s))

sp([key expression],

BIRTHDAY,LABEL(s))

sp([key expression],
<block height>,LABEL(s))

```
sp([key expression],
    840000,LABEL(s))
```

```
sp([key expression],
    840000,LABEL(s))
```

```
sp([key expression],
    840000,LABEL(s))
```

sp(spscan1q...,840000)

sp([key expression],
BIRTHDAY,LABEL(s))

sp([key expression],
BIRTHDAY,LABEL(s))

```
BIP: 352
Layer: Applications
Title: Silent Payments
Author: josibake <josibake@protonmail.com>
        Ruben Somsen <rsomsen@gmail.com>
Comments-URI: https://github.com/bitcoin/bips/wiki/Comments:BIP-
Status: Proposed
Type: Standards Track
Created: 2023-03-09
License: BSD-2-Clause
```

Labels

For a single silent payment address of the form (B_{scan}, B_{spend}), Bob may wish to differentiate in multiple silent payment addresses, but this would require him to scan for each one, which becc can label his spend public key B_{spend} with an integer m in the following way:

- Let $B_m = B_{spend} + hash(b_{scan} || m) \cdot G$ where m is an incrementable integer starting from 1
- Publish (B_{scan}, B_1), (B_{scan}, B_2) etc.

Alice performs the tweak as before using one of the published (B_{scan}, B_m) pairs. Bob detects th

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B_{spend}), Bob may wish to differentiate incoming payments. Naively,
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in the following way:

incrementable integer starting from 1

It is important to note that an outside observer can easily deduce th
published address will have B_{scan} in common. As such, labels are no
way for Bob to determine the source of an incoming payment.

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Labels for change

sp([key expression],
BIRTHDAY,LABEL(s))

sp([key expression],
BIRTHDAY,”janet”)

sp([key expression],
BIRTHDAY,”janet”, “nifty”)

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sp([key expression],
BIRTHDAY,LABEL(s))

sp([key expression],
BIRTHDAY,1)

sp([key expression],
BIRTHDAY,1,10)

sp([key expression],
BIRTHDAY,1,10,21)

sp(spscan1q...,840000)

sp(spscan1q...,840000)

sp(spscan1q...,840000,1,10,21

sp(spscan1q...,840000,1,10,21)

akes:

- A key expression (first argument)
- A birthday as a positive integer representing a block height (second argument)
- Zero or more label integers (remaining arguments), where each label is a positive integer

Code | Pull requests 67 | Actions | Wiki | Security | Insights

Add sp() output descriptor format for BIP352 Silent Payments #2047

Open craigraw wants to merge 2 commits into `bitcoin:master` from `craigraw:spdescriptor`

Conversation 7 | Commits 2 | Checks 4 | Files changed 1

Commit 6807d2f | 0 / 1 viewed

Filter files...

bip-spdescriptor.mediawiki

Update headers and remove space after comma in descriptors

craigraw committed 2 weeks ago · ✓ 4 / 4

bip-spdescriptor.mediawiki

```
BIP: 352
Layer: Applications
Title: Silent Payments
Author: josibake <josibake@protonmail.com>
        Ruben Somsen <rsomsen@gmail.com>
Comments-URI: https://github.com/bitcoin/bips/wiki/Comments:BIP-
Status: Proposed
Type: Standards Track
Created: 2023-03-09
License: BSD-2-Clause
```

Edit profile

nifty, btc++ taipei dec 15-17

@niftynei

irreverent orange-pilled postrat. teaches @base58btc writes @btcinsider__ hosts @btcplusplus runs @core_LN ⚡ eng @blockstream

ATX btcpp.dev Joined March 2009 >

Edit profile

nifty. btc++ taipei dec 15-17

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Base58

School of Engineering

a protocol school built on the bitcoin standard

base58.school

bitcoin++

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